



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,391	09/19/2003	Shuhua Jin	JEN-0111-P	4214

23413 7590 02/14/2006
CANTOR COLBURN, LLP
55 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

EXAMINER

SANDERS, KRIELLION ANTIONETTE

ART UNIT PAPER NUMBER

1714

DATE MAILED: 02/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/665,391

Applicant(s)

JIN ET AL.

Examiner

Kriellion A. Sanders

Art Unit

1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/3/06.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 9, 10, 21, 22, 29 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification fails to provide an enabling disclosure for the silsequioxane filler of claims 9, 10, 21, 22, 29 and 30 when that filler is of the formula, $R_7T_4D_3(OY)_3$. The substituents T_4 and D_3 are not defined in such a manner so as to allow one of ordinary skill in the art to make and use the invention. Applicant's amendment defines T and D, not T_4 and D_3 .

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 9, 10, 21, 22 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 9, 10, 21, 22, 29 and 30 fail to particularly point out the substituents of the formula, $R_7T_4D_3(OY)_3$. The substituents R_7 , T_4 and D_3 are not defined in such a manner so as to allow one of ordinary skill in the art to make and use the invention. It is also noted that

Art Unit: 1714

applicant defines a substituent "R" in the claims, but there is no such substituent in the formula.

There is, however an R₇. Also in the claims "arylakyl" should be changed to -arylalky--.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-8, 11-20 and 24-35 are rejected under the judicially created doctrine of double patenting over claims 1-30 of U. S. Patent No. 6,653,365 in view of Lichtenham et al, US Patent No. 5484867, since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

Art Unit: 1714

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as set forth in the following explanation.

Lichtenhan et al discloses polyhedral oligomeric silsesquioxanes that correspond to those of applicant's claims. Lichtenham further discloses a process for making a reactive silsesquioxane oligomer which includes the steps of providing a trifunctional *polyhedral oligomeric silsesquioxane* of the formula $\text{Si}_7 \text{R}_7 \text{O}_9 (\text{OA})_3$, where OA is --OH, --OSb(CH₃)₄, --OSn(CH₃)₃ or --Otl), and R is an alkyl, alkenyl, aryl, or alkoxy group, and corner capping the trifunctional silsesquioxane by reacting it with a compound of the formula M-Z to form a *polyhedral oligomeric silsesquioxane* having the formula $\text{Si}_7 \text{R}_7 \text{O}_{12} \text{M}(\text{Z})$, where R is an alkyl, alkenyl, aryl, or alkoxy group, M is a silane, siloxane, or organometallic group, and Z is a reactive group. The corner capping reaction proceeds by a condensation reaction between the hydroxyl or alkoxide groups on the silsesquioxane and the appropriate functionality (M) on the silane, siloxane, or organometallic group. The reactive group Z is preferably selected from the group consisting of hydrides, esters, acids, acrylates, alkyl acrylates, alcohols, halides, substituted alkyl, alkenyl, or aryl groups, alpha-olefins, alpha-epoxides, and cyclic compounds which can undergo ring opening polymerization or ring opening metathesis polymerization. Patentee discloses that it is possible to manipulate the Z functionality on the resulting *polyhedral oligomeric silsesquioxane* by employing a variety of substitution techniques. For example, the Z functionality may be converted to an alcohol where the reactive group Z is chloride, bromide, or iodide, by adding silver perchlorate to a solution of the polyhedral oligomeric silsesquioxane in

Art Unit: 1714

aqueous acetone, and removing the acetone under reduced pressure after the reaction takes place.

See col.2, line 20 through col. 5, line 32.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the specific polyhedral oligomeric silsequioxanes of Lichtenhan et al as those polyhedral oligomeric silsequioxanes of US Patent 6653365 to formulate the dental compositions. Since Lichtenhan et al is credited with first producing the polyhedral oligomeric silsequioxanes.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Applicant indicates that he will file a terminal disclaimer.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 11-20 and 24-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,653,365 in view of Lichtenham et al, US Patent No. 5484867 as applied to claims 1-8, 11-20 and 24-35 above.

Art Unit: 1714

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to use the specific polyhedral oligomeric silsesquioxanes of Lichtenhan et al as those polyhedral oligomeric silsesquioxanes of US Patent 6653365 to formulate the dental compositions. Since Lichtenhan et al is credited with first producing the polyhedral oligomeric silsesquioxanes.

Information Disclosure Statement

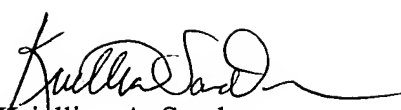
References cited on form 1449 must include both a month and year of publication to be fully considered.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kriellion A. Sanders whose telephone number is 571-272-1122. The examiner can normally be reached on Monday through Thursday 6:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit: 1714



Kriellion A. Sanders
Primary Examiner
Art Unit 1714

ks